Attachment 6: Budget

Table Att6-1 presents the standard budget format required by the proposal solicitation package. There is no non-State share for this project. The requested grant funding will completely cover the project costs.

Table Att6-1: Project Budget

Budget Category		Non-State Share* (Funding Match)	Requested Grant Funding	Total
Task 1	Assessment and Evaluation of Phase I Data	$-	$65,806	$65,806
Task 2	Integrate the Creek/Aquifer Interaction Results into the Olympic Valley Groundwater Flow Model	$-	$72,810	$72,810
Task 3	Develop Groundwater Pumping Guidelines for Olympic Valley	$-	$15,720	$15,720
Task 4	Reporting	$-	$70,513	$70,513
Task 5	Administration	$-	$25,150	$25,150
	Grand Total	**$-**	**$250,000**	**$250,000**

Table Att6-2 provides the hourly breakdown and costs for each task and subtask. Hourly rates are included for each different staff level.

Budget and Scheduling Assumptions

Task 1: Assessment and Evaluation of Phase I Data

Hours to evaluate depth specific temperature data (Task 1.1) are based on discussions we have had with Dr. Andy Fisher to understand the level of effort required for the number of monitoring points. Five weeks have been scheduled for this subtask, as there will be some back and forth between Dr. Fisher and our consultant, HydroMetrics WRI, during the assessment and evaluation. Twenty-four hours for Andy Fisher at a rate of $185 per hour have been included in Table Att6-2, under the subcontractor column of Task 1.1. Dr. Fisher believes this is an adequate amount of time for senior oversight.

Aquifer test analysis (Task 1.2) will take approximately two weeks of full time work. The schedule provides for four weeks of 50% commitment.

Integrating tracer and climate change data with the creek/aquifer interaction evaluations from Tasks 1.1 and 1.2 will take eight weeks of part-time commitment. Dr. Moran is an assistant professor at CSU East Bay and has teaching commitments that will prevent her from working full-time on this project. A graduate student will work almost full-time under her supervision. The hourly breakdown of the $35,014 budget estimated for Dr. Moran and a graduate student is provided in Table Att6-3.

Task 2: Integrate the Creek/Aquifer Interaction Results into the Olympic Valley Groundwater Flow Model

Updating and re-calibrating the groundwater flow model will take place over a period of 21 weeks (almost two quarters). The hours estimated are based on HydroMetrics WRI's previous modeling work in Squaw Valley. The time commitment over the modeling will be less than 50%. Much of the time will be spent calibrating the model using parameter estimation techniques that can run for a number of days unmanned. The development of model scenarios will require communicating with stakeholders to ensure the scenarios are developed correctly and that all assumptions are acceptable. This will increase the length of time to complete this task, even though active hours are not being billed.

Task 3: Develop Groundwater Pumping Guidelines for Olympic Valley

A four-week period has been estimated to complete the pumping guidelines. Staff time commitment will be less than 50%.

Task 4: Reporting

- Four weeks for the Technical Memorandum on Seasonal Creek/Aquifer Interactions (Task 4.1). Time commitment of staff will be approximately 50%.
- Three weeks for the Technical Memorandum on Pumping Impacts on Squaw Creek (Task 4.2). Time commitment of staff will be approximately 50%.
- Six weeks for the Technical Memorandum on LLNL Temperature Isotope Tracers as they relate to Creek/Aquifer Interactions (Task 4.3). Time commitment for staff will be 50%.
- Four weeks for the Technical Memorandum on the Groundwater Model Update and Scenario Results (Task 4.4). Time commitment of staff will be 60%.
- One day for each quarterly report (Task 4.5), and
- Two weeks for the final report (Task 4.6), with 80% commitment. Seven hardcopy final reports will be produced ($55 per report).

Task 5: Administration

Project management will occur throughout the project period. Project administration time by consultants will be limited to a total of 48 hours, which when combined with contract administration time of 8 hours, is 4% of the requested grant amount.

Four meetings are assumed. Two people will attend two of the meetings, and one person will attend the other two meetings. For each meeting, hours for each person amount to 12 hours. This comprises 3 hours preparation time, 2 hour meeting, and 7 hours travel time. Travel assumptions are provided below.

Travel Assumptions

Travel costs are based on State of California, Department of Water Resources reimbursement guidelines. For budgeting purposes, we have assumed that the maximum per diem will be claimed, however only actual expenses will be billed during the project. We have included and estimated 8.5% tax on allowed lodging expenses

	Total Trips	Person Nights	Per Diem Cost	Mileage Cost	Travel Time, hours
Task 5.3: Meetings (Four)	4	6	$786.84	$843.60	42

Mileage reimbursement rate	$ 0.555	per mile
Allowed lodging rate ($84.00 x 1.085)	$ 91.14	per day
Meals and incidentals	$ 40.00	per day

Two staff attend two meetings and one staff person attends the other two meetings.

Each round trip is 380 miles. Travel time for each round trip is seven hours, and has been added to the hours to attend meetings.

Table Att6-2: Professional Services Budget

Tasks	HydroMetrics WRI Labor					Subcontractor	Other Direct Costs[1]	TOTALS
	Principal Hydrogeologist	Groundwater Modeler	Senior Hydrogeologist	Labor Costs				
Rates	$195 /hr	$165 /hr	$165 /hr	**Hours**	**($)**	**($)**	**($)**	**($)**
Task 1. Assessment and Evaluation of Phase I Data								
1.1 Quantify Stream/Aquifer Interaction using Depth Specific Temperature Data	10	0	60	70	$ 11,850	$ 4,440	$ -	$ 16,290
1.2 Establish Pumping Impacts on Squaw Creek by Analyzing Aquifer Test Data	40	0	60	100	$ 17,700	$ -	$ -	$ 17,700
1.3 Integrate Results from Tasks 1.1 and 1.2 with LLNL Climate Change and Tracer Study	24	8	15	47	$ 8,475	$ 23,341	$ -	$ 31,816
Subtotal Task 1	*74*	*8*	*135*	***217***	***$ 38,025***	***$ 27,781***	***$ -***	***$ 65,806***
Task 2. Integrate the Creek/Aquifer Interaction Results into the Olympic Valley Groundwater Flow Model								
2.1. Update Conceptual Model	16	24	14	54	$ 9,390	$ -	$ -	$ 9,390
2.2 Update Input Data	8	40	24	72	$ 12,120	$ -	$ -	$ 12,120
2.3 Run Model and Calibrate	40	120	16	176	$ 30,240	$ -	$ -	$ 30,240
2.4 Design and Run Up to Five Model Scenarios	20	80	24	124	$ 21,060	$ -	$ -	$ 21,060
Subtotal Task 2	*84*	*264*	*78*	***426***	***$ 72,810***	***$ -***	***$ -***	***$ 72,810***
Task 3: Develop Groundwater Pumping Guidelines for Olympic Valley	*40*	*0*	*48*	***88***	***$ 15,720***	***$ -***	***$ -***	***$ 15,720***
Task 4: Reporting								
4.1 Technical Memorandum on Seasonal Creek/Aquifer Interactions (Deliverable for Task 1.1)	24	0	60	84	$ 14,580	$ -	$ -	$ 14,580
4.2 Technical Memorandum on Pumping Impacts on Squaw Creek (Deliverable for Task 1.2)	16	0	40	56	$ 9,720	$ -	$ -	$ 9,720
4.3 Technical Memorandum on Creek /Aquifer Interactions from LLNL Tracer and Water Quality Data (Deliverable for Task 1.3)	0	0	0	0	$ -	$ 11,718	$ -	$ 11,718
4.4 Technical Memorandum on the Groundwater Model Update and Scenario Results (Deliverable for Task 2)	12	40	48	100	$ 16,860	$ -	$ -	$ 16,860
4.5 Quarterly Reports (Three)	24	0	12	36	$ 6,660	$ -	$ -	$ 6,660
4.6 Final Report	12	10	40	62	$ 10,590	$ -	$ 385	$ 10,975
Subtotal Task 4	*88*	*50*	*200*	***338***	***$ 58,410***	***$ 11,718***	***$ 385***	***$ 70,513***

Tasks	HydroMetrics WRI Labor					Subcontractor	Other Direct Costs[1]	TOTALS
	Principal Hydrogeologist	Groundwater Modeler	Senior Hydrogeologist	Labor Costs				
Rates	$195 /hr	$165 /hr	$165 /hr	**Hours**	**($)**	**($)**	**($)**	**($)**
Task 5. Administration								
5.1 Project Management	24	0	24	48	$ 8,640	$ -	$ -	$ 8,640
5.2 Contract Administration	8	0	0	8	$ 1,560	$ -	$ -	$ 1,560
5.3 Meetings (Four)	48	0	24	72	$ 13,320	$ -	$ 1,630	$ 14,950
Subtotal Task 5	*80*	*0*	*48*	*128*	*$ 23,520*	***$ -***	***$ 1,630***	***$ 25,150***
PROJECT TOTAL	***366***	***322***	***509***	***1,197***	***208,485***	***$39,499***	***$ 2,015***	***$ 250,000***

Notes

Other direct costs include per diem, transportation, office supplies, photocopies, and postage

Per diem rate is $143.00 per day, mileage is at IRS rate of 55.5c per mile

Table Att6-3: Subcontractor Budget Summary for Tasks 1.3 and 4.3

		Dr. Moran Hrs	Student Hrs	Dr. Moran $165/hr	Student $15.15/hr	**Total**
Task 1.3	Distributed Temperature Sensor Data	20	0	$ 3,300	$ -	$ 3,300
	Chemistry & Isotope Study	60	408	$ 9,900	$ 6,181	$ 16,081
	Integrate with HydroMetrics Results	24	0	$ 3,960	$ -	$ 3,960
	Subcontractor Total Task 1.3	*104*	*408*	*$ 17,160*	*$ 6,181*	*$ 23,341*
Task 4.3	Technical Memorandum	60	120	$ 9,900	$ 1,818	$ 11,718
	Subcontractor Total Task 4.3	*60*	*120*	*$ 9,900*	*$ 1,818*	***$ 11,718***
	Totals	**164**	**528**	**$ 27,060**	**$ 7,999**	**$ 35,059**